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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,966	10/20/2005	Alexei Alexandrovich Kalachev	05-1576	7500

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PATENT, COPYRIGHT & TRADEMARK LAW GROUP
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AKRON, OH 44320

EXAMINER

VANORE, DAVID A

ART UNIT	PAPER NUMBER
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2881

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/527,966	Applicant(s) KALACHEV ET AL.	
	Examiner David A. Vanore	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3 is/are allowed.
- 6) ☒ Claim(s) 1-2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/09/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed October 24, 2006 have been fully considered but they are not persuasive.
2. Applicant has argued with respect to claim 1 at page 4 of the response that the Lowry et al. reference is non-analogous art. The examiner disagrees. Both the instant application and the applied reference are for detecting quenching states in a superconductor (Col. 1 of Lowry et al.). Given the broadly recited field of invention set forth in the specification of the instant application, Lowry et al. cannot be dismissed from consideration as non-analogous.
3. Applicant further argues that Lowry et al. is distinguished from the instant application because Lowry utilizes constantly pulsed activation energy. Col. 12 of Lowry shows that the material investigated "can be periodically pulsed with activation energy" and "when the source is not refreshing the TL material..., the luminescence detectors can be monitoring the TL emissions". This shows that Lowry does not as a rule require continuous pulsing, and that observation occurs when pulsing of the material under test is not occurring, contrary to Applicant's assertions.
4. The final paragraph of the remarks at page 5 of the response of October 24, 2006 sets forth the novelty of the present application. This language is not present in the claims.
5. Applicant further traverses the 35 USC 103(a) rejection at pages 6-7 of the response. While the applicant's remarks have been considered, it is the opinion of the

examiner that one of ordinary skill could determine and expose a material under test to the appropriate amount of radiation to effect observation of said sample as previously set forth. Applicant again traverses the rejection on the grounds that Lowry is not related to the instant application. Again, it is the opinion of the examiner that the inventions are related, and the rejection is maintained.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 1 stands rejected under 35 U.S.C. 102(b) as being clearly anticipated by Lowry (USPN 5,683,179).

8. Regarding claim 1, Lowry teaches a device and method of operation for investigating the properties of a sample where a sample comprising a superconductor is subjected to irradiation by a pulsed radiation (Col. 12 Lines 3-18) where the radiation may be an atom beam and/or electron beam and/or molecular beam and/or ion beam and/or photon beam (Col. 7 Lines 1-10), where the irradiation activates the sample surface, and where a temperature control system where an energization system (Col. 7 Lines 20-34) heats the device and a heating coil (Item 156), cooling system (Col. 7) and energy sink (Item 26) removes excess energy from the device to maintain a desired operating temperature. Energy is emitted from the surface and detected by a quench

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sensor (Item 10) and Luminescence detectors (Items 20a and 20b) which indicates the physical and electrical state of the sample (Col. 3 Lines 50-63 and Col. 4 Lines 19-25).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 2 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Lowry (USPN 5,683,179).

11. Lowry teaches all the required method steps recited in claim 1.

12. Lowry fails to teach the use of an irradiation pulse which has a power from 10^{-5} to 10^{-3} Watts per square centimeter.

13. The irradiation means of Lowry is pulsed, activates the surface layer, and has a power output over a given area, which may be measured as Watts per square centimeter.

14. It would have been obvious to one having ordinary skill in the art at the time the invention was made control the power output of the irradiation means of Lowry to be in the range of 10^{-5} to 10^{-3} Watts per square centimeter because the irradiation pulse energy must be sufficient to activate the surface layer exposed. One of ordinary skill would be able to determine what the desired energy to be imparted to the surface layer may be to produce such an activation of the surface layer, and accordingly adjust the output of the radiation source producing said irradiation pulse.

Allowable Subject Matter

15. Claim 3 is allowed.
16. The following is an examiner's statement of reasons for allowance:
17. Claim 3 is allowable over the prior art because the prior art fails to teach the activation of a surface by a low temperature plasma where the plasma generating gas is from 4 to 8 Pascal for a period of 0.05 to 5 seconds are used to record radiation spectra at a constant sample temperature, as set forth in the claim.
18. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

19. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

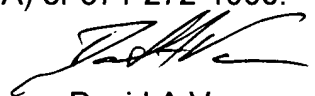
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Vanore whose telephone number is (571) 272-2483. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



David A Vanore
Primary Examiner
Art Unit 2881

dav